# DOCUMENTED BRIEFING

## RAND

# An Assessment of Recent Proposals to Improve the Montgomery G.I. Bill

*Beth J. Asch, C. Christine Fair, M. Rebecca Kilburn*

**National Security Research Division**

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DB - 301 - OSD/FRP

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# PREFACE

In recent years, military recruiting has become more difficult while college enrollments have risen dramatically. As more youth pursue college, the military increasingly relies on college benefits to attract recruits. College costs have grown enormously at the same time that youth interest in college has grown. These two trends have called into question whether the military's primary college benefits program, the Montgomery GI Bill, provides a large-enough benefit to enable veterans to meaningfully cover their college costs. In 1999, the Montgomery GI Bill provided a maximum monthly benefit of $528 for up to 36 months to individuals who satisfactorily complete their military service obligation, who participate in an approved educational program, and who agree to contribute $100 per month during their first year of active service.

Many of the concerns about the adequacy of the Montgomery GI Bill were highlighted by the Congressional Commission on Servicemembers and Veterans Transition Assistance. In January 1999, this commission issued its report, known as the *Principi Report*, named after the commission's chairman. Considering the commission's report along with concerns about the poor state of military recruiting and retention in recent years, policymakers in Congress created four bills in the first half of 1999—two in the Senate and two in the House of Representatives—that sought to enhance the Montgomery GI Bill program.

This documented briefing presents an assessment of these proposals in terms of their effects on veterans' ability to pay for college and on the ability of the armed forces to attract and retain recruits. It also provides cost estimates of the different proposals and seeks to place the issue of military educational benefits in a broader context by asking what is the best way to help individuals combine college and military service. The analysis was conducted in a short time-frame and drew on earlier research to provide time-sensitive results. The research should be of interest to policymakers concerned about the adequacy of the Montgomery GI Bill as well as researchers interested in military recruiting and retention and veterans' benefits.

and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies.

# ACKNOWLEDGMENTS

## Key Features of Recent Proposals to Improve MGIB Benefits

| | S-1059 | S-1076 | HR-1071 Basic | HR-1071 Enhanced | HR-1182 Enhanced |
|---|---|---|---|---|---|
| Higher monthly benefit | $600 | $600 | $900 | | |
| Covers tuition costs | | | | 100% | 90% |
| Covers average book costs | | | | ✓ | ✓ |
| Provides monthly stipend | | | | $800 | $600 |
| Eliminates $1,200 contribution | ✓ | ✓ | ✓ | ✓ | ✓ |
| Transferable benefits | ✓ | | | | |
| Allows accelerated payments | ✓ | ✓ | ✓ | ✓ | ✓ |

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This chart lists the four bills that Congress was considering in the summer of 1999. Both S-1059 and S-1076, the two Senate bills, proposed to raise the maximum monthly MGIB benefit from its current $528 per month to $600 per month. They also proposed to eliminate the $1200 member contribution and to allow members to accelerate the payout of their benefits. Acceleration would allow individuals to attend more expensive institutions for a shorter duration. It also would give them the ability and convenience to coordinate the timing of the receipt of their benefits with the timing of their tuition bills. S-1059 proposed to allow members to transfer their benefit to family members or dependents, and to allow MGIB benefits to be used for college-preparation courses and graduate school entrance exams.

Both of the House bills, HR-1071 and HR-1182, proposed to offer a basic and an enhanced benefit. The enhanced HR-1071 bill would cover 100 percent of tuition and fee costs and average book costs for individuals who served for four years on active duty. It would also provide a monthly stipend of up to $800 per month for full-time enrollment. The benefit would be offered not only to those who enlisted, but also to those who reenlisted or extended their first enlistment term. The enhanced version of HR-1182 would offer to those who completed four years of active service and who were high-school graduates a benefit equal to 90 percent of their tuition and fee costs and would cover their average book costs. It would also give a stipend of up to $600 per month.

For those who were not eligible for the enhanced benefit, HR-1071 would give a basic benefit equal to a maximum of $900 per month. Both the basic and the enhanced versions of HR-1071 would eliminate the member contribution and allow accelerated payments.

Those who did not qualify for the enhanced benefit under HR-1182 would get a basic benefit equal to the current benefit, $528 per month.

The basic benefit under HR-1182 is not listed in this chart because it offers the same monthly benefit as the current benefit, and we do not analyze the effects of this program. Both the enhanced and basic versions of HR-1182 would eliminate the member contribution and allow for acceleration of the pay-out of benefits.

This briefing presents an analysis of the effects of increasing the monthly benefit, offering a stipend, and covering tuition costs on veterans' ability to pay for college and on the military's ability to recruit and retain personnel. It also analyzes to some extent the effects of eliminating the member contribution. However, it does not address the potential effects of transferability nor the acceleration of payments.

The briefing focuses on what might be considered the long-run effects of the bills. For example, the analysis does not examine the interim effects of allowing people currently covered by the MGIB to transfer to the new MGIB at reenlistment. Instead, it focuses on the effects of allowing new members to enlist under each alternative bill.

The proposals listed in the chart incorporate many of the ideas to improve the MGIB that have arisen in recent years. Several of these ideas were recommended by the Congressional Commission on Servicemembers and Veterans Transition Assistance. In January 1999, this commission issued its report, known as the "Principi Report," named after the commission's chairman, Anthony Principi. The Principi report recommended, for example, paying the full cost of tuition, providing a monthly subsistence allowance, and eliminating the member contribution, similar to HR-1071 and (to some extent), HR-1182. Therefore, although the Principi Report's recommendations are not explicitly analyzed in this briefing, many of its key recommendations, as reflected in HR-1071 and HR-1182, are considered here.

Since the summer of 1999, additional bills to enhance the MGIB have been proposed. Although the analysis presented in this briefing does not examine the effects of these newer proposals, the analysis should be of interest to those concerned about the adequacy of the MGIB and the effects of some often-suggested ideas for enhancing it.

Our analytic approach is to draw on past research to provide some answers to the above questions. The rest of the briefing discusses the results of this analysis. First, the analysis highlights some of the reasons why MGIB benefit levels are being reconsidered. The analysis then examines how raising MGIB benefits would affect veterans' ability to cover average college costs, and how it would likely affect military recruiting, reenlistment, and attrition. This analysis also examines how raising benefits would likely affect program usage and cost.

Next, we draw on past research findings to provide indications of what might be the effect on recruiting of eliminating the pay reduction. We also provide indications of how increasing the MGIB would affect financial aid awarded to nonveteran students.

The final part of the analysis places the issue of increasing the MGIB benefit into a broader context and addresses the question of whether the MGIB benefit is the best way to provide educational benefits to individuals who serve in the military.

**High School Graduates Are Enrolling in College at Record Rates**

College Enrollment of Recent High School Graduates
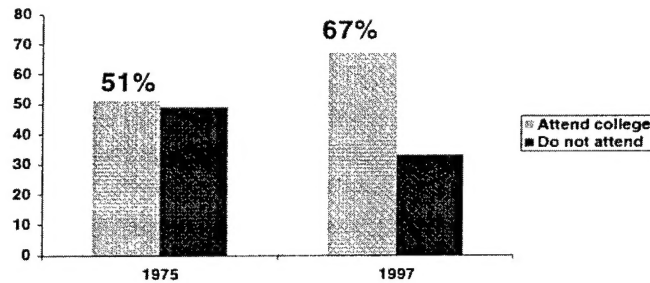
Source: USDL 98-171, and Digest of Ed. Statistics, 1996

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One reason for renewed interest in improving the MGIB is the dramatic increase in college enrollment rates that has occurred in the past 20 years. This graph shows that, in 1975, only 51 percent of recent high school graduates went to college within 12 months of graduation. In 1997, this figure had grown to 67 percent, according to the Department of Labor and available education statistics. The military traditionally targets the recruitment of individuals who do not plan to attend college immediately after high school graduation. This group is not growing anywhere nearly as fast as the group that goes to college right away, a group that the military has not traditionally targeted.

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**College Offers Big Financial Payoff**

*College Premium*

(% Difference Between Four-Year College Graduate
and High School Graduate Hourly Wage)
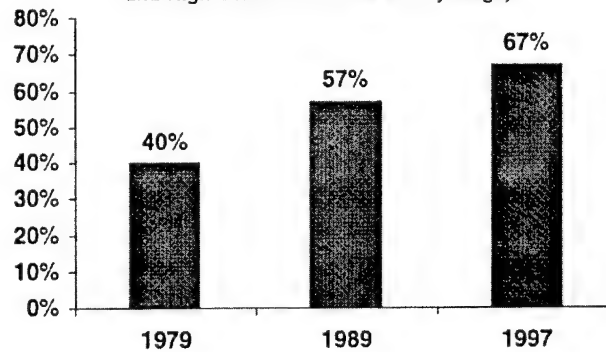
Source: Mishel, Bernstein, and Schmitt (1998)

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The large increase in college enrollments is, in part, a response to the large increase in the relative labor market return associated with going to college.  As a result of this increase, individuals with college earn relatively more in the labor market.  This labor market phenomenon is a well-known finding among economists who track these trends.  The rise in the college premium, defined as the percentage difference between the hourly wage of a four-year college graduate and the hourly wage of a high school graduate rose from 40 percent in 1979 to 67 percent in 1997.

**MGIB and College Fund Benefits Have Lagged Behind Tuition Costs in Growth**

*Percent Increase in Average Tuition, Maximum Award, Maximum MGIB and ACF, 1985–1999*

Values shown on bars: 65.0 (4-Year Public Tuition), 66.0 (4-Year Private Tuition), −5.7 (Pell), −22.6 (SEOP*), −10.3 (Perkins), −20.8 (Work Study), 16.2 (MGIB 1999), 31.1 (ACF 1999)
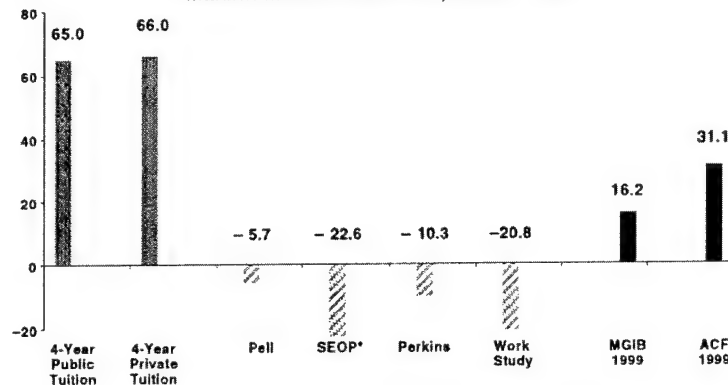
Sources: Statistical Abstract of the United States, 1996; U.S. Army Recruiting Command
* Supplemental Educational Opportunity Program

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Another reason for renewed interest in improving the MGIB is that real college tuition costs have sky-rocketed in the last decade for both private and public schools. This cost increase is shown by the gray bars in the graph for tuition at four-year public and private schools. Real room and board costs have also grown, although that is not shown in this chart.

The graph also shows that the real increase in the MGIB and ACF between 1986 and 1999—shown by the black bars—has been substantially less than the increase in real tuition costs. This disparity in the growth of the MGIB benefit relative to school costs has generated concern about the adequacy of the MGIB benefit.

For comparison's sake, we show that the growth in other federal aid programs over this period has also lagged behind the real growth in college costs. These program benefits have either just kept pace with inflation or have lagged behind inflation and had negative growth.

**Recruiting Difficulties are Leading to Missed Accession Missions**

Non-Prior Service Accessions

Mission ▪ Actual
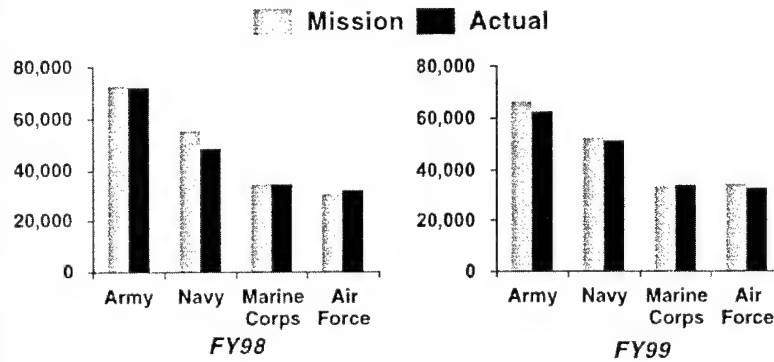
Source: Office of the Under Secretary of Defense
(Personnel and Readiness), Accession Policy Directorate

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The MGIB benefit serves a dual purpose. It not only provides veterans with a transition benefit as they reenter the civilian economy, but it also serves as a recruiting tool to attract youth into the armed forces.

Yet another reason concern has been expressed about the adequacy of the MGIB benefit is that recruiting is in trouble, especially for the Army and the Air Force in FY99, but also for the Navy in FY98. This chart compares the actual non-prior service accessions (black bars) to the mission (gray bars) in FY98 on the left and in FY99 on the right. That some of the services are missing their accession missions is unusual and has not occurred in almost two decades. Thus, policymakers are concerned about the adequacy of current recruiting policies.

**MGIB Enrollment Rates
Are over 90 Percent**

Percent of Enlistees Who Enroll in the MGIB Program
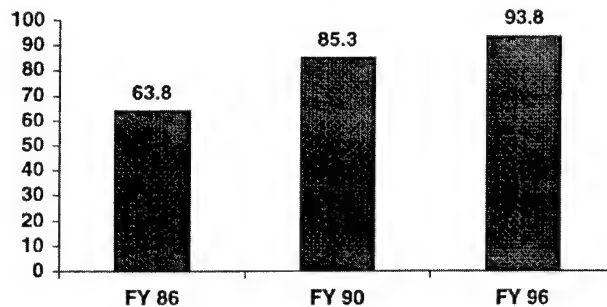
Source: 1996 DMDC Montgomery GI bill data file

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It is unknown to what extent current recruiting problems can be
specifically attributed to the adequacy or inadequacy of the MGIB or
the Army and Navy college funds, although past studies show that
educational benefits improve recruiting and are a cost-effective
recruiting resource (Fernandez, 1984; Polich, Dertouzos, and Press,
1986; Hogan, 1991; and Asch and Orvis, 1994). Nonetheless, we note
that over 90 percent of those who enter the military enroll in the
MGIB program and contribute to it. This proportion has grown over
time. The high rate of participation demonstrates that the reason for
recruiting problems cannot be attributed to the lack of enrollment
into the program. Instead, recruiting problems associated with the
MGIB program would be attributable to other factors, such as the
level of benefits and those who actually use the benefit.

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**Overview of Findings**

| | |
|---|---|
| Current MGIB | **Covers public school tuition costs** |
| Senate Bills | Cover public school tuition costs, but not private tuition costs or public school tuition + living costs |
| | Increase usage |
| House Bills | Cover public or private school costs |
| | Improve recruiting and attrition, but reduce reenlistments<br>- Would adversely affect recruiting in critical skills<br>- Create adverse inter-service recruiting effects |
| | Would significantly increase usage |
| | Would significantly increase total cost |

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This chart summarizes the main results of our analysis. We find that the current level of MGIB benefits covers public school tuition costs but not public or private school total costs. Total costs include tuition as well as room and board. The same can be said of the Senate bills, although the analysis indicates that the Senate bills would increase the rate of usage of benefits among veterans.

The House bills, which are the two proposals that increase MGIB benefits the most, are predicted to have the biggest effects on the adequacy of benefits and on military personnel outcomes. Both bills would provide benefits that would cover public school total costs and private school tuition costs while HR-1071 would also cover total costs at private schools in most states. That is, it would cover both tuition and room and board in most states. Both House bills are predicted to improve recruiting substantially but to improve first-term attrition only slightly. These proposals are also predicted to reduce reenlistment rates somewhat, implying that each recruit would supply fewer man-years to the military.

Since HR-1071 would eliminate the college fund program, which is one of the key ways the services channel recruits into hard-to-fill and critical occupational specialties, this proposal would adversely affect the services' ability to fill these specialties. Furthermore, available evidence suggests that the House bills, which cover tuition costs and offer a stipend, can create adverse recruiting effects for those services that use the college funds the most, such as the Army, to the benefit of those services that use them the least, such as the Air Force.

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We also estimate that usage rates would increase substantially under the House bills. Because accessions would rise, reenlistments would fall, and usage rates would rise substantially, we estimate that the House bills would increase MGIB program total costs by an enormous amount.

To analyze the effect of improving MGIB benefits on veterans' ability
to cover college costs, we needed to estimate how much the MGIB
benefit would rise under the House proposals. These proposals
would base the benefit on tuition costs, as described earlier.
Therefore, we first needed to estimate tuition costs under these
proposals.

This chart highlights a key point regarding the structure of the
House proposals and its potential effect on tuition cost. Available
evidence suggests that basing the MGIB benefit level on tuition costs,
rather than providing a flat sum as in the current program, will give
veterans an incentive to choose more expensive schools. This likely
change in veterans' school choices will cause the average tuition
costs that veterans pay to rise above their current levels.

Evidence on how individuals respond to a program that bases the
educational benefit on tuition costs rather than paying a lump sum is
provided by the Army ROTC program. In 1995, the Army switched
from a program whereby ROTC scholarships were based on tuition
levels equal to 80 percent of tuition costs or $8000, whichever was
higher, to one where the scholarship was a lump sum of between
$5000 and $12000 per year, depending on the individual. RAND
analysis (Goldman and Mattock, 1999) found that private school
enrollments were 45 percent higher when the ROTC benefit was
based on tuition costs rather than being provided as a lump sum.

Public school enrollments were lower while enrollments in military colleges and historically black colleges and universities were the same.

This evidence suggests that we need to account for the behavior of veterans, and the likelihood that they will alter their school choices and go to more expensive programs, when we estimate tuition costs for the purpose of estimating benefit levels under the House proposals.

## Recent Veterans' College Attendance Patterns Provide a Lower Bound for Estimating Tuition Costs

|                              | Veterans | All Students |
| ---------------------------- | -------- | ------------ |
| Mean Monthly Tuition Costs*  | $280     | $624         |
| In Two-year colleges         | 90%      | 38%          |

*in 1999 dollars

Sources: Statistical Abstract of the U.S., 1998, and
Beginning Post-Secondary Educational Survey, 1994

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To estimate tuition costs under the House proposals, we use information on average tuition costs among recent veterans, obtained from our analysis of Department of Education data, and among all students. Using the Department of Education's Beginning Post-Secondary Education (BPS) data set, we estimate that the average monthly tuition cost for veterans is only $280. Average monthly costs are low because the BPS data indicate that 90 percent of veterans go to two-year colleges, schools that in general are far less expensive than four-year colleges. This 90 percent figure is likely to be an overestimate of the proportion of veterans who attend two-year college because the BPS data capture only those who are beginning their post-secondary education for the first time. If a significant fraction of veterans at two-year institutions later transfer to four-year institutions, then the proportion who attend two-year institutions will be lower than 90 percent. Little is known about the educational and institutional choices of veterans. Available information on all students (again based on the BPS) indicates that the transfer rate to four-year institutions is relatively low (Asch and Kilburn, forthcoming). Still, more research is needed on how veterans make educational choices and how they use their educational benefits.

The enrollment behavior of all students provides a potential alternative cost estimate of $624 per month. The BPS data indicate that only 38 percent of all students attend two-year colleges. The $624 figure is not an upper estimate of average tuition costs under the House proposals. It is possible that the House bills would

change veterans' school choices to such an extent that even less than 38 percent of veterans would attend two-year institutions under these proposals. If this is the case, average tuition costs may exceed $624 per month. In the analysis that follows, we use the $624 figure as an upper estimate of average monthly tuition cost under the House bills.

## We Use Tuition Estimates to Estimate a Range of Benefits Under the House Proposals

|  | Max. Monthly MGIB Benefit |
|---|---|
| Current MGIB | $528 |
| Senate proposals | $600 |
| HR-1071: | |
|    Enhanced MGIB + $800 stipend | $1,080[1] to $1,424[2] |
|    Basic MGIB | $900 |
| HR-1182: | |
|    Enhanced MGIB + $600 stipend | $852[1] to $1,160[2] |

[1]Based on attendance patterns of recent veterans
[2]Based on attendance patterns of all students

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Given these tuition cost estimates, we can estimate the mean monthly benefit under the different proposals. The current maximum monthly MGIB benefit is $528. The Senate proposals would raise this to $600 per month, and the basic HR-1071 MGIB would raise it to $900 per month. When we assume a mean monthly tuition cost of $280, which corresponds to the attendance patterns of recent veterans, the enhanced HR-1071 monthly benefit is $1080 and the enhanced HR-1182 monthly MGIB benefit is $852. However, when we assume a mean monthly tuition cost of $624, corresponding to the attendance patterns of all students, the estimate is $1424 under HR-1079 and $1160 under HR-1182.

We will be using these figures later when we analyze how the different proposals are likely to affect veterans' ability to cover their college costs and the military's ability to recruit and retain personnel.

## The Estimated House MGIB Benefits Are Greater Than Mean Federal Aid for All Students

| | Max. Monthly MGIB Benefit |
|---|---|
| Current MGIB | $528 |
| Senate proposals | $600 |
| HR-1071: | |
| Enhanced MGIB+$800 stipend | $1,080[1] to $1,424[2] |
| Basic MGIB | $900 |
| HR-1182: | |
| Enhanced MGIB+ $600 stipend | $852[1] to $1,160[2] |
| Mean federal aid per month | $637 |
| Mean National Merit Scholarship per month | $55 |
| Mean Army ROTC Scholarship | $1,100 |

[1]Based on attendance patterns of recent veterans
[2]Based on attendance patterns of all students

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For comparison's sake, we note that mean federal financial aid from all sources, which includes such programs as the Pell Grant and the Stafford Student Loan, is $637 per month. The mean National Merit Scholarship is even less. These alternative sources are important to recognize not only because they provide a benchmark by which to compare the various MGIB proposals, but also because veterans may qualify for these other sources and combine them with their MGIB benefit. That is, veterans can receive both types of aid. Unfortunately, little is known specifically about the extent to which MGIB benefits are actually combined with other aid, or with what type of aid. This is an area for future research.

Another benchmark by which to compare the MGIB proposals is the ROTC scholarship program. The mean Army ROTC scholarship and stipend is about $10,000 per year or $1100 per month. This figure exceeds the current MGIB benefit but is less than the mean benefit provided by the House bills.

**Current MGIB Benefits Already More than Cover Public Tuition Costs in Most States**

Mean Tuition Costs, Public Schools, AY98-99
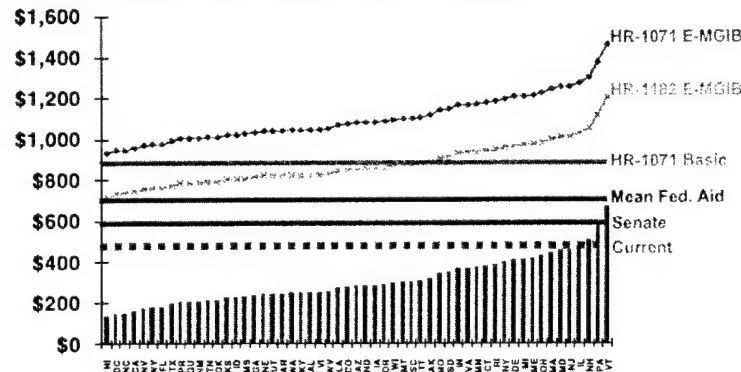
Source: WebCaspar data, Fair (forthcoming)

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The next set of charts shows how the current monthly benefit, the proposed benefit under the alternative proposals, and mean federal financial aid compare to college costs. We first compare benefit levels to mean public tuition and fee costs in each state, shown by the vertical bars. The vertical bars are ordered from the lowest-cost state, Hawaii in the case of public tuition costs, to the highest-cost state, Vermont. The charts that follow use alternative definitions of college costs and focus on private rather than public post-secondary educational institutions. Data on college costs are from the Department of Education and are analyzed more extensively in comparison with the MGIB and the college funds in Fair (forthcoming).

The horizontal lines indicate the monthly lump-sum benefit under alternative programs. Under the current MGIB, the maximum lump-sum benefit is $528 per month, as illustrated by the dashed line. The enhanced House proposals are upward sloping because they represent either 100 percent or 90 percent of mean tuition costs in each state plus the stipend. Since mean tuition costs vary by state, so do the mean benefit levels by state.

The graph shows that even the current level of benefits covers mean tuition costs in public schools in virtually every state. Therefore, current benefits are adequate in terms of covering average public school tuition costs.

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**When We Add Room and Board Costs, Senate Proposal Covers Most Public School Total Costs in About Half the States**

Mean Total Costs, Public Schools, AY98-99
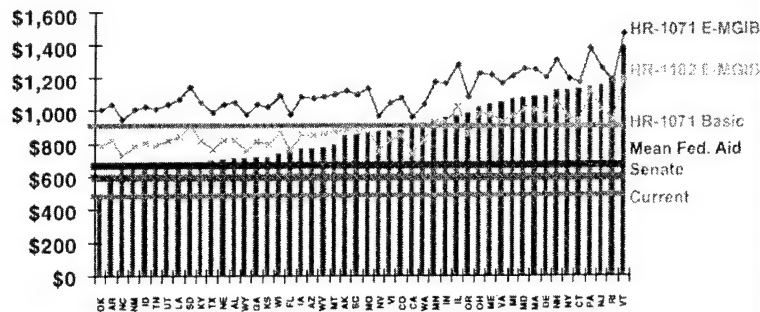
Total cost = tuition + fees + room + board

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When we add mean room and board costs to compute mean total costs of public school in each state, the picture changes. Current benefits do not cover total costs in almost all states. The Senate proposals, which provide a benefit that is similar in amount to the mean federal aid from all sources, covers most of total public school costs in about half the states. By most, we mean 75 percent or more. Put differently, under the Senate proposals, individuals could cover at least 75 percent of their total costs of attending public post-secondary educational institutions in about half the states.

The House bills are more generous and therefore, not surprisingly, cover more of the cost of attending school. More specifically, the enhanced MGIB benefit under HR-1079 would cover all public school costs in all states, because the increase in the cost of the school chosen by the veteran is matched by an increase in the benefit level. When a lump-sum amount is offered, as under the Senate bills, the benefit does not cover the most expensive schools or the schools in the most expensive states.

**Current Federal Aid Programs Do Not Generally Cover Private School Tuition Costs**

*Mean Tuition Costs, Private Schools, AY98–99*
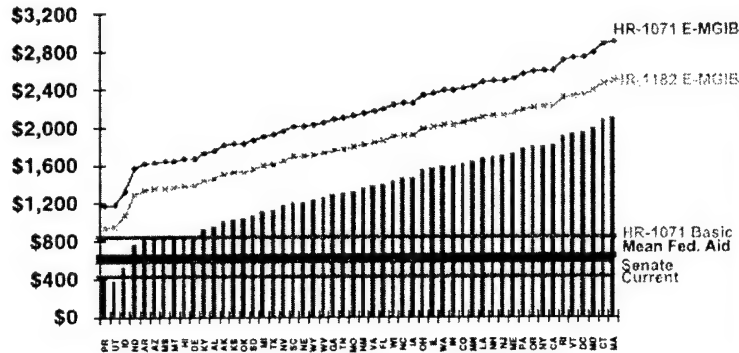
Source: WebCaspar data, Fair (forthcoming)

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Turning now to private schools, we find that tuition costs at private schools are more than double the tuition costs at public schools. We also find that mean federal financial aid from all sources does not cover private-school tuition costs in nearly all states. The same is true of the Senate proposals. The enhanced MGIB benefit under the House proposals are substantially more generous than the mean aid offered by all federal programs, and therefore would easily cover all private-school tuition costs in all states.

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**...Nor Private School Total Costs in Most States**

Mean Total Costs, Private Schools, AY98–99
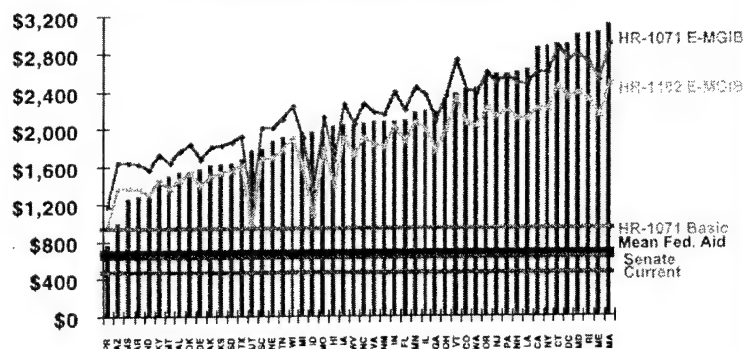
Total cost = tuition + fees + room + board

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Given that they do not cover private tuition costs, it is not surprising that neither mean federal aid nor the Senate proposals cover total private-school costs. We estimate that only HR-1079 would cover private-school total costs in almost all states. The results shown in this chart as well as the previous three charts indicate that, by providing a benefit that covers college costs as well as a stipend, the House proposals cover virtually all of the direct costs associated with attending college.

## Analysis of Recruiting, Retention, and Usage Effects Focus on Percent Changes in MGIB Benefits

|  | Percent Change Relative to _Current Monthly Benefit_ |
|---|---|
| _Senate proposals_ | _14_ |
| _HR-1071:_ | |
| _Enhanced MGIB + $800 stipend_ | _105[1] to 170[2]_ |
| _Basic MGIB_ | _70_ |
| _HR-1182:_ | |
| _Enhanced MGIB + $600 stipend_ | _61[1] to 120[2]_ |

[1]Based on attendance patterns of recent veterans
[2]Based on attendance patterns of all students

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We now analyze the effects of the various proposals on active duty accessions, attrition, and reenlistments. We also estimate the effects of these proposals on the likelihood of someone using the benefit, given that they left service, and the dollar amount of the benefit that they use, given that they use any of it.

To conduct this analysis, we focus on percent changes in the dollar amount of the monthly benefit relative to the current program rather than the absolute dollar amount of the benefit. For example, the Senate proposal, which would raise the maximum monthly benefit to $600 from $528, represents a 14-percent increase in the monthly benefit. The percent increase in the enhanced House MGIB benefits depends on our tuition cost estimate. If we base tuition costs on the behavior of recent veterans, the HR-1079 enhanced MGIB benefit represents a 105 percent increase, whereas the HR-1182 enhanced MGIB benefit represents a 61 percent increase. If we base the tuition cost estimate on the behavior of all students, the figures are 170 percent and 120 percent, respectively. As in the earlier analysis, we use the figures based on attendance patterns of recent veterans as a lower bound and the figures based on attendance patterns of all students as upper bounds.

**Available Evidence Suggests that Proposals Will Produce an Increase in High-Quality Enlistments**

| | Pct change MGIB benefit | X | Effect on HQ recruits* | = | Pct change in HQ recruits |
|---|---|---|---|---|---|
| Senate proposals | 14 | | | | 3 |
| HR-1071: | | | | | |
| E-MGIB + $800 stipend | 105 – 170 | | .20 | | 21 – 34 |
| Basic MGIB | 70 | | | | 14 |
| HR-1182: | | | | | |
| E-MGIB + $600 stipend | 61 – 120 | | | | 12 – 26 |

* Warner, Payne, and Simon (1999)

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We draw on past studies to estimate how these percent changes in the benefit levels translate into a change in accessions. The first column repeats the percent changes in the benefit levels shown in the previous chart. The .20 effect shown in the middle column is obtained from a recent study of the enlistment effects of educational benefits (Warner, Payne, and Simon, 1999). This effect indicates the percent change in high-quality enlistments due to a 1 percent change in educational benefits. The study finds that a 1 percent increase in benefits results in a .20 percent increase in high-quality accessions.

Given this .20 figure, the proposed increases in the MGIB translate into the percent change in high-quality accessions shown in the right column. The Senate bills, which represent a modest increase in the benefit level, are predicted to have a small impact on accessions. On the other hand, the House bills are predicted to have a larger effect on high-quality accessions, with increases ranging from 12 to 34 percent.

## However, HR-1071 Will Eliminate Incentive to Enlist in Critical Skills

|  | Mean or Max. Monthly Benefit for: | |
|---|---|---|
|  | _Critical Skill_ | _Noncritical Skill_ |
| *$30K College Fund for Enlistment in Critical Skill* | *$833* | *$528* |

|  | Max. Monthly Benefit for Any Skill |
|---|---|
| *HR-1071:* |  |
| *Enhanced MGIB + $800 stipend* | *$1,424* |
| *Basic MGIB* | *$900* |

*Tuition Definition: Average tuition costs for all students*

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However, because HR-1079, the most generous of the proposals, would eliminate the college funds, the relatively greater incentive to enlist in a critical skill would be eliminated. A key benefit to the military of offering the college fund to potential high-quality enlistees is that it provides a means of channeling these recruits into hard-to-fill and critical occupational areas. That point is shown here.

Assuming that a typical enlistee would receive a $30,000 college fund for a four-year enlistment in a critical skill, the monthly benefit would be $833 ($30,000/36). For someone entering a noncritical skill who is not eligible for the college fund, his or her benefit would be $528 per month under the current MGIB program.

The lower portion of the chart shows the mean monthly MGIB benefit for enlistment in any skill under HR-1079. Under this proposal, individuals enlisting in a critical skill would see their monthly benefit rise by the difference between $1424 and $833, or $591. On the other hand, individuals enlisting in noncritical skills would see their benefit rise by the difference between $1424 and $528, or $896. Since the latter increment is larger than the former, the incentive to enlist in noncritical skills is greater than the incentive to enlist in critical ones.

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Consequently, the services will have to use other means to channel recruits into hard-to-fill and critical occupations. One such alternative would be to use enlistment bonuses that are tied to enlistment in critical occupational areas. However, a problem with enlistment bonuses as a skill-channeling method is that they can be quite costly (Polich et al., 1986; Asch and Orvis, 1994).

Evidence from the early 1980s provides some insight into the
potential inter-service effects of the House proposals.

During that time, the Educational Assistance Test Program (EATP)
was a national randomized experiment that was conducted by OSD
to examine the enlistment effect of varying the level and structure of
military educational benefits. One of the test cells in the experiment
was the so-called tuition/stipend program, which offered enlistees a
stipend plus a benefit based on tuition costs, much like the House
proposals. Another one of the test cells was the so-called "Ultra-
VEAP Kicker," which offered a benefit similar to the current college
funds; that is, it offered an additional benefit to those entering hard-
to-fill occupational areas.

Analysis of the experimental results indicated that the
tuition/stipend program hurt the Army, which was the main service
offering the Ultra-VEAP kicker, and helped the Air Force and Navy,
which were the services that did not offer kickers (Fernandez, 1984).
Specifically, enlistments in the tuition/stipend test cell fell by 6
percent for the Army, while they rose by 11 percent and 8 percent,
respectively, for the Navy and Air Force, relative to the control cell
and relative to the pre-test period.

Although the enlistment experience from nearly two decades ago
may not be directly relevant today, given the changes in the military
and the environment in which it operates, the results are suggestive

of how HR-1079 will affect the different services. The results of the EATP suggest that under HR-1079, enlistments in critical occupations in the services that use the college funds extensively—namely the Army and the Navy—will be adversely affected, while enlistments in those services that do not rely on the college funds to fill critical occupations, will be helped.

## Evidence Suggests that Proposals Will Also Produce a Slight Fall in First-Term Attrition

|  | Pct Change MGIB Benefit | x | Effect on Attrition* | = | Pct Change in Attrition |
|---|---|---|---|---|---|
| Senate proposals | 14 | | | | −1 |
| HR-1071: | | | −.05 | | |
| E-MGIB + stipend | 105 to 170 | | | | −5 to −9 |
| Basic MGIB | 70 | | | | −4 |
| HR-1182: | | | | | |
| E-MGIB + stipend | 61 to 120 | | | | −3 to −6 |

* Asch and Dertouzos (1994)

27   RAND

We now examine estimates of the first-term attrition effects of the various proposals. Since one of the criteria for receiving the MGIB is completion of one's service obligation, the MGIB provides members with an incentive to complete service and not leave before the end of their obligation. Available evidence indicates that while this incentive effect exists, it is not large (Asch and Dertouzos, 1994). That is, evidence indicates that a 1 percent increase in the MGIB benefit reduces attrition by only .05 percent. Using this .05 figure, we find that the Senate proposals would have a small effect on attrition, while the House proposals are estimated to have a larger effect. However, even under the House proposals, we estimate the effect on attrition to be relatively small.

The MGIB also provides an incentive for members to leave active service once they have completed their service obligation because to use the full benefit, individuals must separate from active duty. Existing evidence gives an estimate of this incentive effect equal to .08 (Hogan, Smith, and Sylwester, 1991). That is, evidence suggests that a 1 percent increase in the MGIB benefit would result in an .08 percent decline in the reenlistment rate. Applying this estimated effect to the changes in the MGIB benefit under each proposal, we find that the Senate proposals are estimated to have a minute effect on reenlistments, while the House proposals would have a larger effect, ranging from a 5 to 14 percent decline in the reenlistment rate. However, even the effects of the House proposals are not large, given the magnitude of the change in benefits.

## ...But a Substantial Rise in Usage Rates

| | Pct Change MGIB Benefit | x | Effect on Usage* | = | Pct Change in Usage |
|---|---|---|---|---|---|
| Senate proposals | 14 | | | | 21 |
| **HR-1071:** | | | | | |
| E-MGIB + stipend | 105 to 170 | | 1.5 | | 158 to 255 |
| Basic MGIB | 71 | | | | 107 |
| **HR-1182:** | | | | | |
| E-MGIB + stipend | 62 to 120 | | | | 93 to 180 |

*Usage Rate = Fraction of separating eligible personnel who use any of the benefit*

\* Hogan, Smith, and Sylwester (1991)

29   RAND

The previous estimates indicate that the effects of the various proposals on accessions, attrition, and reenlistment rates would be modest. In contrast, available evidence suggests that the effect on usage rates is likely to be large among those who have separated from service. The effect is estimated to be 1.5, meaning that a 1 percent increase in benefits would increase the probability of usage by 1.5 percent (Hogan, Smith, and Sylwester, 1991). Applying this estimate to the changes in the benefit level under the Senate proposals produces an estimated 21 percent increase in the usage rate among those who separate from service.

The estimated percent increase in the usage rate under the House proposals is enormous, more than doubling (and even tripling in one case) the usage rate. These figures represent potential effects because they suggest that the usage rate would approach or even exceed 100 percent, which is impossible. Since the data upon which these estimates are based are from the 1980s when usage rates were lower than they are today, the 1.5 figure might not be entirely applicable to the 1990s environment. Thus, the actual effects on the usage rates might be smaller than what is shown here. However, even if the effects were half the size estimated here, they still would be sizable. Unfortunately, no information is available on the effects of educational benefits on usage in recent years. As mentioned earlier, more research is needed on the educational choices of veterans and the effects of benefits on usage patterns.

## ...And a Substantial Rise in the Dollar Amount Used

| | Pct change MGIB benefit | x | Effect on $ Used* | = | Pct change in $ Used |
|---|---|---|---|---|---|
| Senate proposals | 14 | | | | 20 |
| HR-1071: | | | | | |
| E-MGIB + stipend | 105 to 170 | | 1.4 | | 147 to 238 |
| Basic MGIB | 71 | | | | 99 |
| HR-1182: | | | | | |
| E-MGIB + stipend | 62 to 120 | | | | 87 to 168 |

\* Hogan, Smith, and Sylwester (1991)

30   RAND

Available evidence also provides some information about how the dollar amount of the benefit would change, given that an individual uses any of the benefit. Evidence from the 1980s indicates that individuals who use their benefit will use more of their benefit under the various proposals. According to past research (Hogan, Smith, and Sylwester, 1991), a 1 percent increase in the benefit results in a 1.4 percent increase in the dollar amount of the benefit used, given any benefit is used at all.

This figure implies that not only will more individuals use the benefit under the Senate and House bills, but the dollar amount of the benefit used will rise substantially, more than triple under the enhanced HR-1079 bill. Again, because these figures are based on an analysis of data from the 1980s when benefit levels were smaller, the 1.4 figure is probably an overestimate of the effect. Nonetheless, even if we assume the effect is somewhat smaller, the change in the dollar amount used is still extremely large under the House bills.

We now estimate the effect of these proposals on program costs. By program costs, we mean the change in the cost of offering the program, given the changes that occur in the benefit levels, the number of enlistments, attrition rates, reenlistment rates, and usage. All of the proposals would increase program cost because they increase the monthly benefit. But, program costs also rise because active-duty members and veterans will change their enlistment, attrition, reenlistment, and usage behavior. As a result of this change in behavior, together with the big increase in the per-person benefit, the House bills are shown to be costly proposals.

The chart shows the simulated effects on behavior and cost for a cohort of enlistees. We assume that 100 individuals enlist under the current MGIB and that all of them contribute to the program. Using information from the Defense Manpower Data Center and from the services based on recent trends in attrition, separation, and usage, we predict that 65 of these 100 enlistees will complete their first enlistment term, 33 will separate at the end of a four-year enlistment term, and about half of these 33, or 16 individuals, will go on to use the MGIB.

To estimate cost, we assume that these 16 individuals attend college full-time for two years. If we multiple 16 times $528 per month times 18 months of enrollment (assuming each academic year is 9 months) and subtract out the $1200 contributed by the 65 people who complete their first enlistment term, we find the cost of the current MGIB for this cohort of 100 is $76,400.

Under the Senate proposals, the enlistment effect is estimated to be 3 percent, implying that 103 people enter service in our simulation. The attrition rate is estimated to fall by 1 percent for those 103 people, implying that 67 people will complete their enlistment term under the Senate proposals. Reenlistments under the Senate proposals are estimated to fall slightly for those 67, implying 34 separate, and because usage rates are estimated to rise for those who separate, we estimate that 20 individuals will use the benefit under the Senate bill.

To compute cost under the Senate proposal, we multiply those 20 by the monthly benefit under the current bill, which is equal to $528 per month. We then multiply this figure by 18, which is the number of months we assume benefits will be used under the current bill, to get about $190,080 (20 x 18 x 528). Next, we multiply the $190,080 figure by the percent change in the dollar amount of the benefit used under the Senate proposals (see the previous chart), or by 20 percent. Since the contribution is eliminated, we do not subtract out contributions made by the individuals. The cost is estimated to be about $228,800 for the 103 individuals.

We perform similar calculations for the House bills. Because of the large estimated effects on the fraction who use the benefit, shown in the previous chart, we set the maximum usage rate to 100 percent when we do the calculations in this chart. The chart shows that the House bills increase total costs by a tremendous amount, not only because the monthly benefit rises, but the enlistment, attrition, reenlistment, and usage rates also change, and these changes have a significant impact on cost. This result continues to hold even if the usage rate is set to a maximum that is significantly less than 100 percent.

An important reason why these proposals are so much more expensive than the current MGIB is that they eliminate the member contribution to the benefit. Because many members who contribute do not actually use the benefit under the current program, the current MGIB is relatively cost-effective. For example, in the simulation in this chart, the contributions under the current MGIB total $78,000 derived by multiplying the $1200 contributions by 65 which is the number of those who do not leave service during the first term. Thus, eliminating the contribution would significantly reduce the cost-effectiveness of the MGIB.

To derive the figures shown in this chart, the lower-bound estimates are used of the enlistment, attrition, and retention effects of the House proposals. Had the upper-bound estimates been used, the enlistment, completion, and separation effects shown in the chart

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would have been even larger for the House proposals. Consequently, cost would have been even larger.

On the other hand, if education benefits increase enlisted supply sufficiently to meet requirements, the services may be able to rely less on other, more expensive recruiting policies such as enlistment bonuses. Previous research shows that enlistment bonuses are a more costly recruiting resource than educational benefits (Asch and Dertouzos 1994; Asch and Orvis, 1994; Warner, Payne, and Simon, 1999). Therefore, there may be a cost savings associated with increasing educational benefits that is not incorporated in the cost figures shown in this chart. Since the House proposals would increase enlistments the most, the cost savings would presumably be the largest for them.

The previous chart showed that the House proposals are significantly more expensive than either the current MGIB program or the Senate proposal. On the other hand, the House proposals also increase enlistments relative to both the current program and the Senate proposals. The rise in enlistments is a positive outcome, but one that drives up costs. To examine whether the effect on cost is disproportionate to the effect on enlistments, we need to examine the marginal costs of the programs.

This chart shows the marginal cost of each proposal relative to the current program. Marginal cost is defined as the change in total cost divided by the change in enlistments.

Although the House proposals have a large effect on total costs, they have a disproportionately larger effect on enlistments. Consequently, the marginal costs of the House proposals are less than the marginal costs of the Senate proposals. Thus, whether the House proposals are the most expensive approach of those considered here depends on whether one considers marginal or total costs.

## Still, House Proposal is Expensive Relative to Other Recruiting Tools

|  | Estimated Marginal Cost |
|---|---|
| HR-1071 Enhanced MGIB | $32,600$^2$ |
| Enlistment Bonuses[1] | $24,000 |
| Advertising[1] | $5,000 – $8,000 |
| Recruiters[1] | $4,300 – $10,000 |
| College Fund[2] | $7,400 – $12,000 |

[1]Source: Warner, Simon, Payne (1999)
[2]$32,600 = $37,800 x (1/1.03)**5

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Although HR-1071 enhanced is the least expensive proposal in terms of its marginal cost, its cost is still high relative to the marginal cost of other recruiting resources. To compare the marginal costs of HR-1071 with the cost of other resources, we need to compute its present value at the enlistment point. Assuming the cost of HR-1071 enhanced would occur five years following a typical enlistment on average, and assuming that the real government discount rate is 3 percent, the discounted marginal cost of HR-1071 enhanced is $32,600 ($37,800 x (1/1.03)**5)).

Even discounted, the cost of this proposal is considerably higher than the marginal cost of other recruiting policies. For example, the marginal cost of enlistment bonuses, another recruiting tool, is about $24,000, and this is considered among the most costly recruiting policies currently used. Advertising is estimated to have a marginal cost of $8000. The marginal cost of the College Fund is also low, between $7000 and $12,000, reflecting that this program is offered to only high-quality recruits in some hard-to-fill occupations. Recruiters are also a cost-effective recruiting tool, and far less costly in terms of marginal cost than the HR-1071 enhanced proposal.

Therefore, although the marginal cost of HR-1071 enhanced is less than the other proposals, it is substantially more than the other recruiting policies that the services currently use. An obvious measure to reduce that cost would be to maintain the member contributions that are part of the current Montgomery GI Bill program. None of the proposals considered here, including HR-1071, do so.

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**We Use Past Research Findings to Provide Insights into These Questions**

- How will raising MGIB benefits
  - Improve veterans' ability to pay for college?
  - Affect military recruiting, attrition, and retention?
  - Increase MGIB usage?

- What are the recruiting implications of eliminating the $1,200 member contribution?

- Will improved MGIB benefits have a positive spillover effect on nonveteran students?

- Is the MGIB the best way to provide educational benefits to those who serve?

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We now present a discussion of evidence on the recruiting effects of eliminating the member contribution, as well as evidence of the potential spillover effect of MGIB on nonveteran students. Finally, we place the MGIB in the broader context of educational benefits for those who serve in the military.

**Research Finding from Early 1980s: Eliminating the Member Contribution Increased Enlistments Slightly**

Results from the 1980–1982 Educational Assistance Test Program

| Service | Enlistments Under Non-Contributory VEAP (% increase) |
|---|---|
| Army | 1 |
| Navy | 4 |
| Air Force | 6[1] |

[1]Statistically different from zero at 5 percent level
Source: Femandez (1984)

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The Educational Assistance Test Program, the national experiment mentioned earlier, provides some evidence on what might be the effect on military recruiting of eliminating the member contribution. One of the test cells in that experiment was a program called the non-Contributory VEAP, which eliminated the member contribution. One would expect that such a program would produce an effect similar to the effect of an increase in basic pay, namely an increase in enlistments.

Analysis of the EATP results found that, although enlistments increased under the non-Contributory VEAP, the effect was not large. Enlistments rose in the Air Force, but there was no statistically significant effect on enlistments in the Army or Navy. This evidence suggests that eliminating the member contribution, although like a first-year pay increase, will not increase enlistments by a large amount.
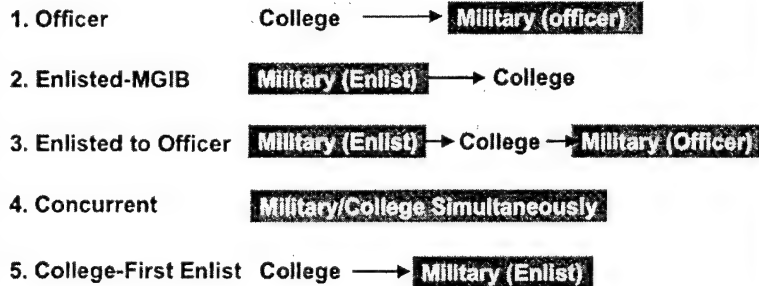
One question that arises regarding the improvement of the MGIB benefit is how doing so would affect the financial aid awards of non-veteran students. If veterans have access to more aid via the MGIB, then colleges might divert aid that would have gone to veterans toward nonveteran students. Consequently, the MGIB might have a positive spillover effect.

Some evidence of this spillover effect is provided by a study of another aid program called the Lilly Endowment Education Award program, which is a financial aid program targeted to Indiana state residents (Klein and Carroll, 1992). The study found that students with aid from the Lilly program laid claim to fewer institutional resources and enabled universities in Indiana to redirect these resources to other students with financial need. Since institutional aid was more scarce at public schools, the ability to redirect aid to other students was more important at public than at private schools. Consequently, the spillover effect was larger in the public schools. This evidence suggests that improving the MGIB might have a positive spillover effect on nonveteran students in terms of increasing the amount of institutional financial aid available to them.

The evidence from the Lilly program also suggests that increasing MGIB benefits might make veterans more attractive to colleges because students who come with financial assistance require less institutional aid, and this aid can be redirected to attractive nonveteran students. Therefore, the probability that a veteran applicant will be accepted for admission into a college might rise.

**MGIB Is Not the Only Way Individuals Can Combine College and Military Service**

1. Officer       College  ⟶  Military (officer)

2. Enlisted-MGIB    Military (Enlist) ⟶ College

3. Enlisted to Officer   Military (Enlist) ⟶ College ⟶ Military (Officer)

4. Concurrent        Military/College Simultaneously

5. College-First Enlist   College  ⟶  Military (Enlist)

        ▮ in service      outside service

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Finally, it is useful to place the MGIB in a broader context and recognize that this program is only one of many that allows individuals to combine military service and post-secondary education.

Earlier analysis (Asch, Kilburn, and Klerman, 1999) highlights five primary ways that individuals can combine college and service. On the officer track, individuals go to college through such programs as ROTC and then enter service. The MGIB is the second track: Individuals enlist, leave service, and then attend college. The third track, which is small, allows individuals to enlist, leave service to attend college, and then allows them to return to the military as an officer. The fourth track allows individuals to attend college while in service. This track includes such programs as tuition assistance and the Voluntary Educational Programs. Finally, there is the college-first track whereby enlistees attend college, perhaps a two-year institution, and then enlist at a higher pay grade. The college-first track is relatively small, but the Army and Navy are considering expanding this track in the future as a means of more effectively attracting high-quality college-bound youth.

## A College-First Program Might Produce Advantages That Are Not Provided by MGIB

- Veterans would get higher lifetime earnings because they would:
  - Earn higher pay while in service
  - Earn higher pay when they leave service
  - Have lower opportunity cost of attending school
- Attractiveness of military to college-bound youth would increase
- Military would get more productive enlistees who would be more likely to reenlist

*Source: Asch, Kilburn, and Klerman (1999)*

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Some of the advantages of the college-first program are listed above. Because individuals who enlist with some college will enter at higher pay, they will earn more pay while in service than they would had they entered as a high-school graduate and used the MGIB after leaving service. Furthermore, since their job assignment and military experience will be more demanding and will provide more on-the-job training, their pay in the civilian labor market will also be higher after they leave service. In addition, the opportunity cost of attending college will be lower because they will attend college when they are younger, before they are likely to have dependents and when their pay in the civilian sector would be relatively low. As a result, the veteran is better off in many ways if he or she attends college before enlisting rather than after.

A college-first program could also benefit the military, because youth who would not even consider military service may find a college-first program of interest. Consequently, such a program can expand enlisted supply. Finally, to the extent that those with some college obtain useful skills that can be transferred to their military jobs, the military will get more productive enlistees and realize a return on its educational benefits investment. Furthermore, since individuals do not have to leave service to claim the benefit, as under the MGIB, reenlistment rates will rise, and man-years per accession are likely to rise as well. Consequently, accession requirements can drop because fewer personnel will need to be replaced.

Thus, a college-first approach can provide benefits that are not likely to be provided by the MGIB. Consequently, to the extent that funds are limited for educational programs for those who serve in the military, consideration should be given not only to improving the MGIB, but also to developing successful college-first programs.

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